Regency
the first name in solid state

PROFESSIONAL 2 WAY action radio

DATE 1/26/83

SSC Service Bulletin

no. 83-293

TO: ALL REGENCY COMMUNICATIONS PROFESSIONAL SALES AND SERVICE CENTERS
ALL REGENCY COMMUNICATIONS PROFESSIONAL SALES REPRESENTATIVES

MODEL AFFECTED: REGENCY 250 (all bands)

SYMPTOM: SELF-QUIETING AND/OR BEAT-FREQUENCY WITH UNMODULATED CARRIER INPUT OF THE RECEIVER

CAUSE:

Harmonics of the 10.240 MHz reference oscillator (Y501) and the 10.245 MHz 2nd L.O .(Y402) cause quieting and/or create a beat-frequency with a carrier.

1. Reference oscillator (10.240 MHz crystal) related receive frequencies where self-queiting or a beat-frequency may be experienced (±15 KHz).

134.040 MHz	154.520 MHz
143.360 MHz	163.840 MHz
144.280 MHz	164.760 MHz
153.600 MHz	174.080 MHz

2. The second local oscillator (10.245 MHz crystal) related receive frequencies below may also produce self-quieting or a beat-note (±15 KHz).

134.095 MHz	163.920 MHz
143.430 MHz	164.830 MHz
144.340 MHz	174.165 MHz
153.675 MHz	175.075 MHz
154.585 MHz	

PRODUCTION CHANGES:

There will be no changes. Since the programming of radios cannot be anticipated, each radio must be checked for these symptoms when the radio is programmed.

SOLUTION:

First, avoid using the problem frequencies listed above (±15 KHz); if unavoidable, determine which oscillator is creating the interference and proceed as directed below.

1. If the 10.240 MHz reference oscillator is the cause of the interference make the following modification to the reference oscillator:

   a. Place a 3.3K ohm (Regency P/N 4704-0332-032) de-queing resistor across the crystal, Y501. This will lower the crystal's activity and thus lower the harmonic generation of the oscillator.

   b. Change C543 from a 56pF to a 68pF capacitor, Regency P/N 1538-0680-509.

   c. Place a ground strap from the bottom shield plate to one of the ground legs of C545, frequency adjustment capacitor (see figure attached).

   d. Tune receiver as outlined in Section 2-2-2 of the Service Manual.

2. If the 10.245 second L.O. is the source of the interference then change the second L.O.'s frequency from 10.245 (low side 2nd L.O. injection) to 11.155 MHz (high side 2nd L.O. injection). Replace Y402 with Regency P/N 2301-3151-602.

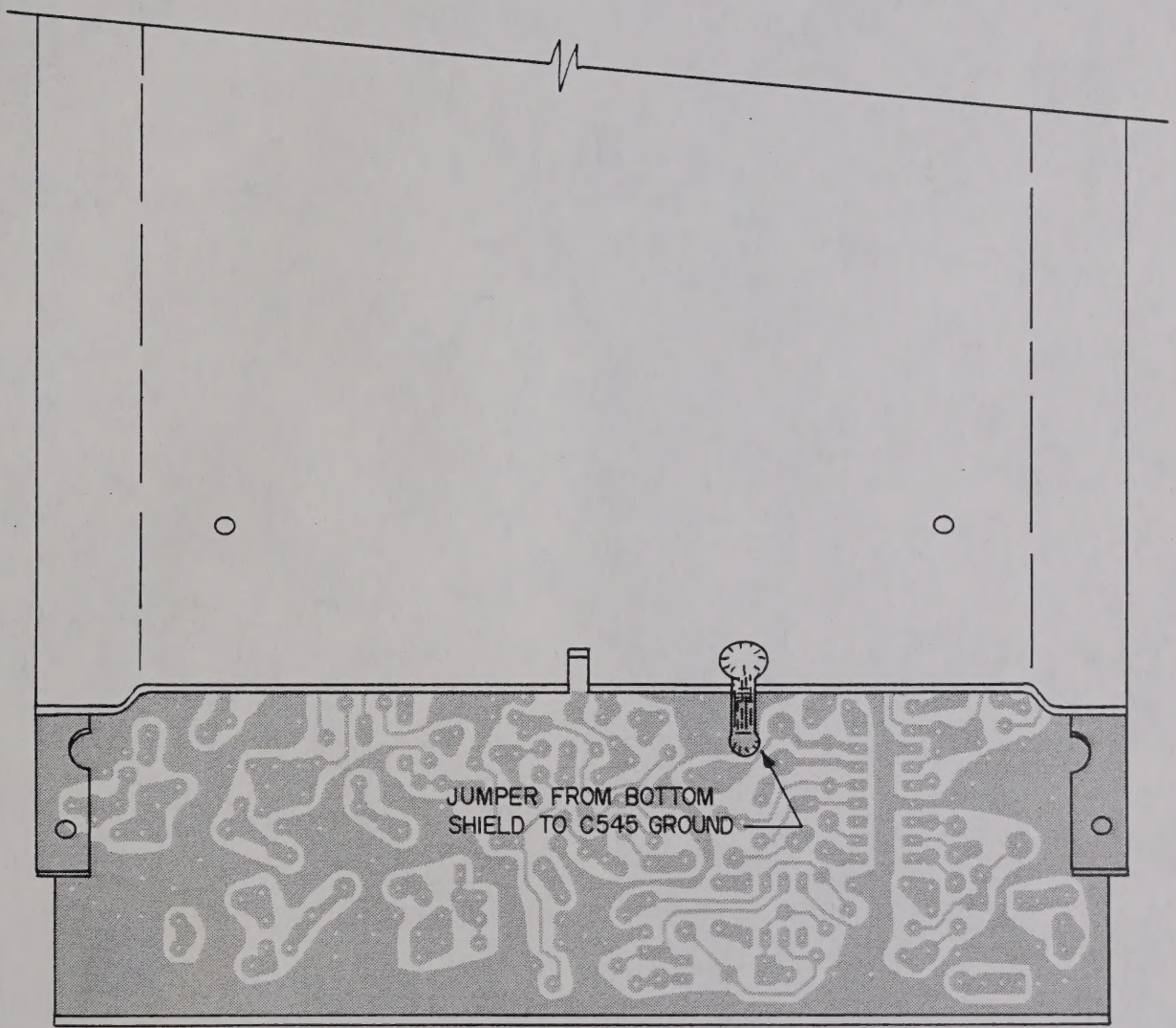
   This crystal, however, has a different set of harmonic frequencies that will cause self-quieting and/or a beat-frequency. Avoid these receive frequencies:

155.105 MHz	156.170 MHz
145.015 MHz	166.415 MHz
155.260 MHz	167.325 MHz

NOTE: Due to receiver bandwidth frequencies within ±15 KHz of the frequencies listed must also be avoided.

TECHNICAL SERVICE DEPARTMENT

REGENCY COMMUNICATIONS, INC.


JUMPER FROM BOTTOM
SHIELD TO C545 GROUND
FRONT OF RADIO